

From Chaos To Construction

Lessons Learned When Constructing A Permanent HHWCC On A Landfill

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California HHW & Used Oil Conference

by

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Integrated Waste Management Department

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7 Years of Planning & Design 1997-2004

- ◆ **3 IWMD directors**
- ◆ **3 HHW program managers**
- ◆ **4 Reorgs & downsizing**
- ◆ **2 On-call A&E firms**
 - **5 project managers**
- ◆ **3 IFBs**
- ◆ **2 CIWMB grant cycles**
 - **7th Cycle - \$151,443**
 - **10th Cycle - \$300,000**
- ◆ **Started construction 1/04**

Presentation Overview

◆ Background

- Integrated Waste Mgt Department
- HHW collection centers

◆ Project History

- Siting to construction
- Issues & considerations

◆ Lessons Learned

- Top 10 list

Integrated Waste Management Department (IWMD)

- ◆ **Owns & operates three landfills**
 - **20,500 tons per day**
- ◆ **Household Hazardous Waste Collection Program**
 - **Four regional permanent HHW collection centers operated under contract**
 - **68,224 participants (02/03)**
 - **4.4 M lbs collected (02/03)**
 - **Funded by landfill gate fees**

Anaheim HHWCC

Temporary facility opened - July 1990

Relocated to current location - January 2000

Located on transfer station property

4,000 square feet

Designed and constructed by transfer station

Paid for by County

Total Cost = \$83,700



Huntington Beach HHWCC

Facility opened - February 1991

Located on transfer station property

4,000 sq. ft.

Designed and constructed by transfer station

Paid for by County

Total Cost = \$84,026



Irvine HHWCC



Facility Opened - May 1994

Located on City of Irvine Property

3,800 square feet

Designed & constructed by City of Irvine

Paid for by County

Total Cost = \$213,280

San Juan Capistrano HHWCC

Facility opened - August 1991

Located on landfill property



Why Relocate?

Located in landfill expansion area

Major repairs required

No utilities

Inconvenient access through fee booth

Out of compliance with current building codes

Low participation



Finding A New Home

- ◆ **Committee formed 1/98 to search for new south county site**
- ◆ **Private solid waste hauler yard; site too remote & road unsafe**
- ◆ **Real estate search – no existing buildings large enough to accommodate traffic flow. Limited availability of vacant land**
- ◆ **Federal Building – no hazardous waste allowed**
- ◆ **City & County Properties – good idea, facilities too small, limited public access, traffic issues**
- ◆ **Last Option: Relocate on the Landfill – easy access for public**

Building at the Landfill

- ◆ Access convenient for public
 - Don't travel same roads as trash trucks
- ◆ Locate on virgin soil if possible
- ◆ Excavation of trash may be necessary
- ◆ Geotechnical study
- ◆ Methane gas monitoring & venting

Fire Department Issues

◆ **Extreme Fire Hazard Zone**

- **Fire sprinklers & hydrant**
- **Continuous water supply**
- **20 minute flow containment**
- **Fire alarm monitoring system**
- **Re-approval of plans required when water supply design changes**

Building Department Issues

◆ Geotechnical

- Building in area of trash

◆ Occupancy Rating

- Office vs. working area

◆ Restrooms

- Permanent facility requires permanent restrooms

◆ ADA Compliance

◆ Electrical

- Explosion Proof?

Design Considerations

◆ Office/break room

- Clean environment
- Weather-tight
- Computer/phone/utility needs
- Paperwork storage and working area

◆ Water and sewer

- Eyewash/shower
- Restroom
- Fire dept. requirements

◆ Traffic flow

- Arterial street access
- Facility access
- Staging area location

Design Considerations (cont.)

◆ Rainwater intrusion

- Roof eaves & gutters
- Fence fabric
- Facility perimeter curbing
- Concrete & asphalt drives sloped away

◆ Recessed floor

- Water accumulation
- Access ramps

◆ Forklift Use

- Traffic rated materials

◆ Supply storage space

◆ Future programs (MEP, Universal Waste, New Equipment)

- Utilities/space requirements

Invitation For Bid Process

- ◆ **11/98 - First on-call A&E**
 - Engineer estimate \$177,036
- ◆ **9/99 – 1st IFB**
 - No bids received
- ◆ **Post mortem conducted**
- ◆ **6/00 – 2nd IFB**
 - Engineer estimate \$383,148
 - Received/rejected 1 bid of \$948,332
- ◆ **4/01 – Second on-call A&E redesign**
 - Engineer estimate \$403,000
- ◆ **9/03 – 3rd IFB**
 - Engineer estimate \$500,000
 - Received/accepted 1 bid of \$890,000

Show Me The Money!

◆ CIWMB HHW Grants

- **\$151,443**
 - ◆ 9/99 to 3/01
 - ◆ Awarded to design & construct
 - ◆ Used for design and trash excavation
- **\$300,000**
 - ◆ 9/01 to 3/04
 - ◆ Awarded to design & construct
 - ◆ Construction began 1/04
 - ◆ Used for site prep and concrete work

Top Ten Lessons Learned

1. Don't Cut Corners!

Procure a knowledgeable A/E firm

- ✓ **Architect with HHWCC design & permit approval experience**
- ✓ **Engineer that understands landfill & grading issues**

2. Teamwork is Essential

- ✓ **Draw on in-house and out-source experts**

3. Keep Project Forward Focused

- ✓ **Team with project manager to drive schedule**

4. No Fire Dept Surprises!

- ✓ **Meet with Fire Department early in process**

5. KISS

- ✓ **Clear and simple bid documents**
- ✓ **Unique Project – Wording is Important**

Top Ten Lessons Learned

6. Consider Your Options Early

- ✓ Partner with a private company
- ✓ Identify existing building or property
- ✓ Landfill as a last resort

7. Reality Check while being Optimistic

- ✓ Time to design & construct takes longer than you think

8. Don't Budget on a Guesstimate

- ✓ Not a routine project – continual modifications increase costs
- ✓ Be prepared construction costs 2x or 3x higher than estimate

9. CIWMB Grants have Limited Time and Money

- ✓ Obtain separate grants for design and construction

10. Patience/Persistence – You'll Need A Lot of It